Application No. 10/668,444
Attorney Docket No. 135487CT (15051US01)

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Original) A method for improved image data acquisition, the method comprising:

forming an initial estimate of a malfunctioning cell in an array of detector rows using cells in a same detector row and projection view as the malfunctioning cell, wherein a detector cell is located in a detector row containing multiple channels; and

adjusting the initial estimate according to an accuracy of estimates performed on at least one of a nearest pair of neighboring detector rows, wherein each member of the pair of rows is an equal distance above or below the detector row with the malfunctioning cell, wherein at least one of the members has a good cell.

2. (Original) The method of claim 1, wherein the initial estimate comprises an interpolation of a signal of the malfunctioning cell.

3. (Original) The method of claim 2, wherein the interpolation comprises summing a product of interpolation coefficients and signals of channels of cells in the same detector row and projection view as the malfunctioning cell.

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4. (Currently Amended) ~~The method of claim 1,~~ A method for improved image data acquisition, the method comprising:

forming an initial estimate of a malfunctioning cell in an array of detector rows using cells in a same detector row and projection view as the malfunctioning cell, wherein a detector cell is located in a detector row containing multiple channels; and

adjusting the initial estimate according to an accuracy of estimates performed on at least one of a nearest pair of neighboring detector rows, wherein each member of the pair of rows is an equal distance above or below the detector row with the malfunctioning cell, wherein at least one of the members has a good cell, and

wherein said adjusting step further comprises calculating a weighted average of estimates from the pairs of rows.

5. (Original) The method of claim 4, wherein said step of calculating a weighted average further comprises calculating the weighted average according to magnitudes of the initial estimate and measurements in the neighboring detector rows.

6. (Original) The method of claim 4, wherein said step of calculating a weighted average further comprise calculating the weighted average according to magnitudes of measured signals of good cells in the pair of rows above and below the detector row with the malfunctioning cell.

7. (Original) The method of claim 4, wherein said step of calculating a weighted average further comprises weighting the estimate of a neighboring row as zero for a neighboring row without a good cell.

8. (Original) The method of claim 4, wherein said step of calculating a weighted average further comprises assigning a greater weight to the estimate of a good cell's signal in the detector row closer to an ISO row of the array.

9. (Original) The method of claim 4, wherein said step of calculating a weighted average further comprises calculating the weighted average according to quality of the signals of the good cells.

10. (Original) The method of claim 4, wherein said step of calculating a weighted average further comprises assigning a greater weight to a neighboring detector row with a good cell signal with a closer measurement to the initial estimate of the malfunctioning cell.

11. (Original) The method of claim 4, wherein said step of calculating a weighted average further comprises calculating the weighted average according to

similarities between the neighboring detector rows with the good cells and the detector row of the malfunctioning cell.

12. (Original) A method for error detection in an image detector array, the method comprising:

comparing average readings between adjacent cells over all projection views for a channel to identify one or more malfunctioning cells.

13. (Original) The method of claim 12, further comprising:

exposing detector cells directly to an x-ray beam without an object to be imaged in the x-ray beam;

measuring a difference between a first reading from a detector cell and at least second and third readings from neighboring cells; and

using the difference between the first, second, and third readings to identify a malfunctioning cell.

14. (Original) The method of claim 12, further comprising storing a position of the malfunctioning cell.

15. (Original) The method of claim 12, further comprising generating an alert identifying the one or more malfunctioning cells.

16. (Original) An imaging system with improved error correction, said system comprising:

an image detector array; and

an image processing system, wherein the image processing system interpolates a signal of a known malfunctioning cell in the image detector array in a projection view using a method of interpolation, wherein the image processing system adjusts the signal based on a weighted average of first and second difference signals produced using the method of interpolation with at least two neighboring rows in the image detector array in the projection view.

17. (Original) The imaging system of claim 16, wherein the weighted average is based on at least one of signal magnitude, signal quality, and row location in the image detector array.

18. (Original) The imaging system of claim 16, further comprising an output capable of generating an alert for the malfunctioning cell.

19. (Original) The imaging system of claim 16, wherein the image processing system comprises at least one of a reconstruction system and a data acquisition system.

20. (Original) The imaging system of claim 16, wherein the image detector array uses the projection view to interpolate the signal of the known malfunctioning cell in the image detector array, and adjusts the signal based on a weighted average of first and second difference signals produced using the method of interpolation with at least two neighboring rows in the image detector array in the projection view.

21. (Original) A method for reducing errors in image data acquisition, said method comprising:

examining at least one of a cell or an application-specific integrated circuit (ASIC) in an imaging system;

mapping the ASIC to optimize opportunities for error correction;

identifying at least one of a malfunctioning channel and a malfunctioning ASIC; and

applying a correction scheme to reduce an error due to the at least one of a malfunctioning channel and a malfunctioning ASIC.

22. (Original) The method of claim 21, further comprising:

estimating a value of the at least one of a malfunctioning channel and a malfunctioning ASIC;

performing a same estimation on rows adjacent to a row including a cell connected to the at least one of a malfunctioning channel and a malfunctioning ASIC; and

using a difference between said estimating and said performing steps to refine said value.